What is claimed is:

1. A method for determining a reference image block in direct coding mode, comprising the steps of:

(1) obtaining a motion vector in a backward reference frame of a B frame with respect to a current image block;

(2) obtaining a motion vector MV(x,y) for direct coding a current B frame image block in accordance with the obtained motion vector of a corresponding image block in the backward reference frame, calculating a forward motion vector MV_F of the current block by using the following formulas:

assuming scale_factor = 2^{shift_len}, td = tp - tb;

if mv(i) < 0 :

MV_F (i) = - (((scale_factor / tp) × (1 - mv(i) × tb)-1) >> shift_len)

else,

MV_F (i) = ((scale_factor / tp) × (1 + mv(i) × tb)-1) >> shift_len)

calculating a forward motion vector MV_B of the current block by using the following formulas:

if mv(i) < 0 :

MV_B (i) = ((scale_factor / tp) × (1 - mv(i) × td)-1) >> shift_len

else,

MV_B (i) = -(((scale_factor / tp) × (1 + mv(i) × td)-1) >> shift_len)

where the scale_factor value is a decimal fraction amplification factor; the shift_len denotes times for right shift; MV_F and MV_B denote a forward motion vector and a backward motion vector corresponding to the current block; tb is a distance in time domain between a current picture and a forward reference picture; td denotes a distance in time domain between a forward reference picture and a backward reference picture; MV denotes a motion vector of the corresponding part of the backward reference picture with respect to a forward

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reference frame; $MV(x,y) = (MV(x), MV(y))$ is a two-dimensional vector, of which the corresponding components are $MV(x), MV(y)$; $MV(i)$ denotes $MV(x)$ or $MV(y)$; and a/b denotes integering a quotient of a and b towards zero;

(3) the forward and backward image block pointed by the motion vector obtained from step (2) acting as a reference image block of the current image block.

2. The method for determining a reference image block in direct coding mode as claimed in claim 1, wherein in step (2), the following method can be used to obtain a motion vector $MV(x,y)$ for direct coding a current B frame image block:

calculating a forward motion vector MV_F of the current block by using the following formulas:

assuming $scale\_factor = 2^{shift\_len}$,

if $mv(i) < 0$:

$MV_F(i) = -(((scale\_factor / tp) - (tb \times scale\_factor / tp) \times mv(i) - 1)$ >> $shift\_len$)

else,

$MV_F(i) = ((scale\_factor / tp) + (tb \times scale\_factor / tp) \times mv(i) - 1)$ >> $shift\_len$

calculating a backward motion vector MV_B of the current block by using the following formulas:

if $mv(i) < 0$:

$MV_B(i) = ((scale\_factor / tp) - (td \times scale\_factor / tp) \times mv(i) - 1)$ >> $shift\_len$

else,

$MV_B(i) = -(((scale\_factor / tp) + (td \times scale\_factor / tp) \times mv(i) - 1)$ >> $shift\_len$)

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where the scale_factor value is a decimal fraction amplification factor; the shift_len denotes times for right shift; MV_F and MV_B denote a forward motion vector and a backward motion vector corresponding to the current block; tb is a distance in time domain between a current picture and a forward reference picture; td denotes a distance in time domain between a forward reference picture and a backward reference picture; MV denotes a motion vector of the corresponding part of the backward reference picture with respect to a forward reference frame; $MV(x,y) = (MV(x), MV(y))$ is two-dimensional vector, of which the corresponding components are $MV(x), MV(y)$; $MV(i)$ denotes $MV(x)$ or $MV(y)$; and a/b denotes integering a quotient of a and b towards zero.

3. The method for determining a reference image block in direct coding mode as claimed in claim 1, wherein in step (2),
calculating a forward motion vector MV_F of the current block by using the following formulas:
assuming scale_factor = 2^{shift_len}, td = tp - tb;
if mv(i) < 0 :
$MV_F (i) = - (((scale\_factor / tp) \times (1 - mv(i) \times tb)) >> shift\_len)$
else,
$MV_F (i) = ((scale\_factor / tp) \times (1 + mv(i) \times tb)) >> shift\_len)$
calculating a backward motion vector MV_B of the current block by using the following formulas:

    if mv(i) < 0 :

    $MV_B (i) = ((scale\_factor / tp) \times (1 - mv(i) \times td)) >> shift\_len$

    else,

    $MV_B (i) = - (((scale\_factor / tp) \times (1 + mv(i) \times td)) >> shift\_len)$.

4. The method for determining a reference image block in direct coding

mode as claimed in claim 1, wherein in step (2),

calculating a forward motion vector MV_F of the current block by using

the following formulas:

assuming scale_factor = 2^{shift_len},

if mv(i) < 0 :

MV_F (i) = -(((scale_factor / tp) - (tb × scale_factor / tp) × mv(i))

>> shift_len) ;

or else,

MV_F (i) = ((scale_factor / tp) + (tb × scale_factor / tp) × mv(i))

>> shift_len;

calculating a backward motion vector MV_B of the current block by using

the following formulas:

if mv(i) < 0 :

MV_B (i) = ((scale_factor / tp) - (td × scale_factor / tp)×mv(i)) >>

shift_len;

or else,

MV_B (i) = - (((scale_factor / tp) + (td × scale_factor / tp)×mv(i))

>> shift_len).

5. The method for determining a reference image block in direct coding

mode as claimed in claim 2, wherein scale_factor / tp , tb ×

scale_factor / tp, td / tp × scale_factor parameters are pre-calculated

prior to the step (1), and a calculated result is stored in a table,

which is directly picked up by the calculation in step (2).

6. The method for determining a reference image block in direct coding

mode as claimed in claim 1,2 or 3, wherein said shift_len in step

(2) is a natural number larger than or equal to 8.

7. The method for determining a reference image block in direct coding

mode as claimed in claim 1, wherein said obtaining a motion vector of the corresponding block of the backward reference frame comprises: selecting a macro block in a backward reference P frame with the same position as a macro block to be coded in B frame as a corresponding macro block, and obtaining a motion vector of the macro block of the P frame.